REGENCY SCANNERS MODEL MX7000 OWNER'S MANUAL
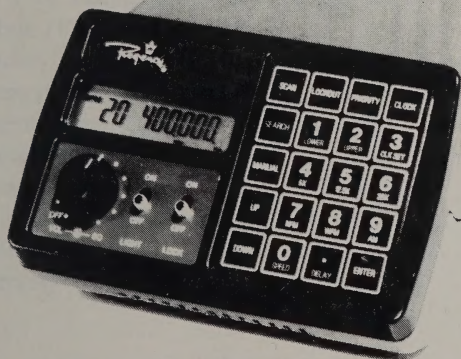
PACKING LIST

1 – Receiver Unit
1 – Wall-mounted AC Power Supply
1 – DC Power Cord
1 – Telescopic Antenna with Right-angle Adaptor
1 – Instruction Manual
1 – Mobile Mounting Bracket

INDEX

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

MAINTENANCE

All servicing should be referred to the Regency Customer Service Department.

UNAUTHORIZED ADJUSTMENTS MAY DAMAGE THE EQUIPMENT OR RESULT IN IMPROPER OPERATION AS WELL AS INVALIDATE THE WARRANTY.

Important

The sections on Preparation for Use and Operation should be thoroughly read before operating the unit. Reading the instructions will result in maximum performance and enjoyment of your radio.

DESCRIPTION

Your Regency MX7000 is a compact, programmable 20 channel. AM/FM monitor receiver for use at home or on the road. It is a double conversion, superheterodyne used to receive frequencies in the 25 to 550 MHz and 800 MHz to 1.2 GHz ranges, in either NFM, WFM, or AM Band. NFM (Narrow FM) is used to receive Police, Fire, Emergency Radio, Mobile Telephone, and other public service frequencies. WFM (Wide FM) is used to receive FM Broadcast and TV audio. AM is used to receive CB and aircraft transmissions.

Sophisticated microprocessor-controlled circuitry eliminates the need for crystals. Instead, the frequency for each channel is programmed through the numbered keyboard similar to the one used on a telephone. A ''beep'' acknowledges contact each time a key is touched.

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Any combination of two to twenty channels can be scanned automatically, or the unit can be set on manual for continuous monitoring of any one channel. In addition, the search function locates unknown frequencies within a band.

Other features include scan delay, scan speed, priority and a light switch to sidelite the liquid crystal display. The MX7000 can be operated on either 120 VAC or 12 VDC.

ANTENNA JACK   POWER CORD JACK

ATT.
0

− 10
(db)

ATTENUATOR   EXTERNAL SPEAKER JACK
SWITCH
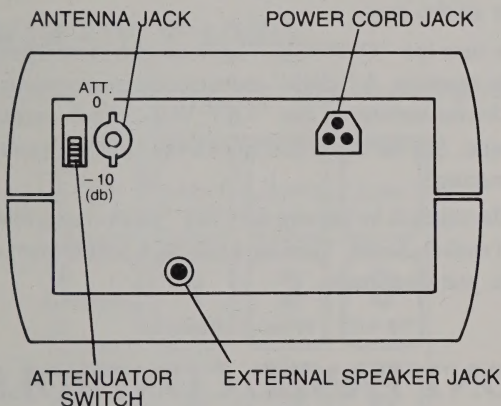
PREPARATION FOR USE

Before operating your MX7000, read the following directions carefully.

1. Unpack the unit from the carton and check for damage. If the unit is damaged, contact the place of purchase immediately as required by the warranty agreement.

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2. Insert one end of the AC power cord into the power cord jack provided on the rear panel of your scanner. See rear panel diagram on page 3. Plug the wall-mounted power supply into a 120 VAC outlet (DC operation is covered on page 19).

3. Insert the telescopic antenna into the antenna jack on the back of the scanner.

4. Before turning on the receiver, turn the "SQ" knob clockwise all the way.

5. Now turn the "OFF/VOL" knob clockwise to apply power to the receiver. A "click" indicates the power is on. Further clockwise turning of the "OFF/VOL" knob increases the volume. Set the knob just above the "click" prior to programming.

6. Set the squelch by turning the "SQ" knob counterclockwise until static is heard. Turn the knob back (clockwise) until the static just disappears.

FRONT PANEL CONTROLS

Volume

When turned clockwise, the VOL knob provides power to the unit and increases the audio level to the desirable or most comfortable listening level.

Squelch

Eliminates background noise while the unit is scanning or searching until a transmission is received.

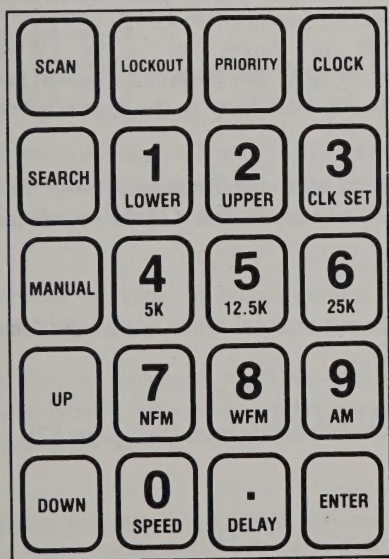## Light

When turned on, illuminates the liquid crystal display.

Lock

When turned on, disables the keyboard to prevent inadvertent entries.

PROGRAM PANEL

The MX7000 has 20 touch-entry keys for easy operation.

Mode Keys

SCAN

Puts the unit into the scan mode (See page 12)

SEARCH

Starts the search process (See page 14)

MANUAL

Provides for manual selection of any channel. Also used when entering frequencies. (See pages 9, 14)

UP

Used to shift the frequency higher in the manual mode, or, search up in the search mode.

DOWN

Used to shift the frequency lower in the manual mode, or, search down in the search mode.

LOCKOUT

Locks out channel while scanning (See page 12)

PRIORITY

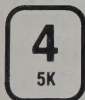Selects Priority feature (See page 17)

CLOCK

Displays time on 24 hour clock

Program Keys

The numbered keys are used for entering frequencies as well as selecting the channel number during programming. The numbered keys also have additional functions as listed below.

1 LOWER **2 UPPER**
Used to enter upper and lower search limits (See page 14)

4 5K **5 12.5K** **6 25K**
Selects frequency separation for search mode. (See page 15)

7 NFM **8 WFM** **9 AM**
Sets receiving mode NFM = Narrow Band FM. WFM = Wide Band FM. AM = AM. (See page 9)

. DELAY
Provides the decimal point when entering frequencies and allows for a delay in the resumption of the SCAN or SEARCH processes. (See pages 9, 13)
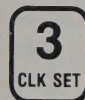
3 CLK SET
Used to set time in hours-minutes-seconds. (See pages 10, 11)

ENTER
For entering a frequency into one of 20 channels or as a search limit. Also used to enter time and set receiver mode and frequency steps.
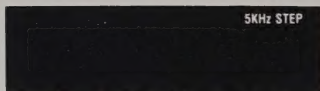
0 SPEED
Allows for selection of two different scanning or searching speeds. (See page 13)

PROMPTING MESSAGES

NFM
WFM
AM

Indicates receiving mode of displayed frequency. NFM = Narrow Band FM. WFM = Wide Band FM. AM = AM. (See page 9)

5KHz STEP

Indicates frequency separation for the search mode. Display will show either 5, 12.5, or 25KHz STEP. (See page 15)
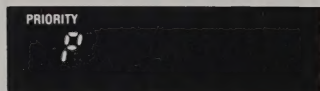
PRIORITY
P

Indicates Priority mode has been selected. (See page 17)

LOCKOUT
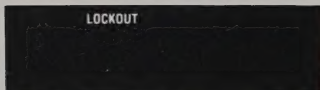
Indicates that the displayed channel has been locked out of the scan sequence. (See page 14)

MHz   KHz
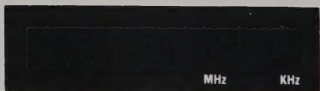
Displayed below frequency to indicate MHz and KHz.

ERROR
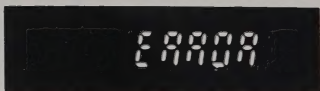
Frequency entered is invalid. (See page 10)

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PROGRAMMING CHANNELS

The MX7000 has 20 channels available for your personal choice of frequencies. The sophisticated microprocessor-controlled circuitry eliminates the need for crystals and allows easy fingertip touch entry of all data.

Programming is done while in the manual mode.

Example: Entering the Narrow Band FM frequency of 465.750 into channel 1.

1. **PRESS:**

(a "beep" verifies contact) Each key will "beep" when touched.

DISPLAY

2. **PRESS:**
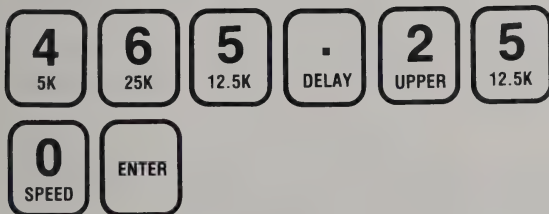
After pressing "ENTER", "CH" will blink indicating the unit is waiting for you to put the frequency into a specific channel.

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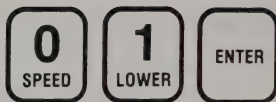
3. **PRESS:**

DISPLAY:

Frequency 465.250 is now in channel 1. Repeat this procedure for each channel to be programmed.

IMPORTANT: Channels 1 through 9 require pressing "0" before pressing the channel number.

NOTE: If you enter an invalid frequency, "ERROR" will appear in the display. Press "MANUAL" and begin again.

IMPORTANT: Each time **is selected for the purpose of entering a frequency, the scanning process immediately stops. The channel and frequency displayed in the digital readout will in no way be affected when you enter the new frequency, unless it is the one you wish to change.**

PROGRAMMING TIME

The MX7000 has a 24 hour clock that shows in the display as long as the unit is plugged in. Programming is done while in the manual mode.

EXAMPLE: Enter the time 13:00 (1:00PM)

PRESS:

[MANUAL] [3 CLK SET] [ENTER]

[1 LOWER] [3 CLK SET] [0 SPEED] [0 SPEED] [ENTER]

DISPLAY: `13 00 00` The clock will now begin to run.

NOTE: The digits for seconds maybe entered if desired.

IMPORTANT: You cannot program time while in the Priority mode.

Programming Hints

1. When programming numerous channels with the same receiving mode, [MANUAL] does not have to be pressed before keying in each frequency. Simply begin with step 2 on page 9 to enter additional frequencies.

2. If an invalid frequency entry is made (''Error'' in readout), you may enter the correct frequency without pressing [MANUAL] first.

SCANNING

After you have programmed the frequencies of your choice, you can scan each one automatically when in the scan mode. To start the scanning process, press

SCAN

If necessary, adjust the squelch control by turning counterclockwise until proper scanning action is obtained (see page 4).

The display will show the NUMBER of each channel as it is scanned. If a transmission is found, the scanner will stop and the display will show both the channel number and the frequency.

At the conclusion of the transmission, scanning will resume automatically.

If you wish to omit a channel from the scan process, simply touch the "LOCKOUT" key while the unit is stopped on a channel during the scan mode, or while in the manual mode on that channel. "LOCKOUT" will show in the display. If all channels are locked out, the display will show:

To put the channel(s) back in, simply touch the "LOCKOUT" key while in the manual mode on that channel.

Scan Delay

During the SCAN mode, you may want to delay resumption of the scan process in order to hear a replay that might otherwise be missed once the unit has gone on to scan other channels.

To do this, press [• DELAY] "DELAY" will appear in the display:

DELAY
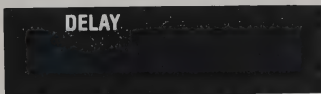
Now, whenever a signal is received, the unit will stop on the channel, display the channel number and frequency and broadcast the message. At the conclusion of the message, the unit will wait approximately 2 seconds before scanning. To de-

activate DELAY, press [• DELAY] again. The "DELAY" will disappear from the display.

Scan or Search Speed

During the SCAN or SEARCH mode, you may choose between two scan or search speeds.

By pressing the [0 SPEED] key, you can change the scan or search speed.

Manual Operation

If at any time you wish to monitor one channel continuously,

press **[MANUAL]** The unit will stop on a channel at random.

Press **[MANUAL]** repeatedly until the desired channel is
reached. Any channel selected in manual that had previously
been "locked out" during scan will show "LOCKOUT" in the
display.

Example:
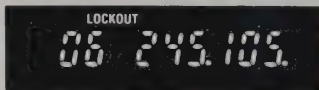
SEARCHING

The MX7000 digital scanner includes a search function that
enables you to locate new frequencies in addition to those you
already know. It can locate active frequencies anywhere within
the entire frequency range.

Two frequencies (lower and upper) are used in the search
mode. For example, to search for unknown active frequencies
between 460.350 and 461.350 MHz in the wide FM band:

PRESS: **[MANUAL]** **[8 WFM]** **[ENTER]** **[1 LOWER]** **[ENTER]**

"Lo" will blink in the display indicating the unit is waiting for you to enter the frequency number of the lower limit.

PRESS: **4** 5K   **6** 25K   **0** SPEED   **.** DELAY

3 CLK SET   **5** 12.5K   **0** SPEED   **ENTER**

Frequency 460.350 is now entered as the lower limit to the search.

PRESS: **2** UPPER   **ENTER**   "Hi" will blink in the display indicating the unit is waiting for you to enter the frequency number of the upper limit.

PRESS: **4** 5K   **6** 25K   **1** LOWER   **.** DELAY

3 CLK SET   **5** 12.5K   **0** SPEED   **ENTER**

Frequency 461.350 is entered as the upper limit to the search.

NOTE: Programming the SEARCH frequencies has no effect on the frequencies that have been programmed into SCAN or MANUAL channels 1 and 2.

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NOTE: If you wish to change the search frequency increment you may do so while in the manual mode. Simply press the key for the desired increment, (5K, 12.5K, or 25K), followed by "ENTER".
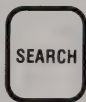
To start the search, press [SEARCH]

The display will initially show "SEARCH" and the lower limit.
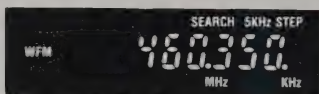
Example:

NOTE: Be sure squelch control is set to eliminate background noise.

The unit will now automatically sample every frequency within the limits you have selected. When an active frequency is found, the unit will stop searching, display the frequency and broadcast the message.

While in the SEARCH mode, you may wish to select the Delay Feature described on page 13. If so, press "DELAY".

When the unit reaches the upper limit of the search it will automatically return to the lower limit and begin again.

If you decide to change modes (i.e. Manual or Scan) while the unit is searching, you may do so. To restart the search, press

[SEARCH]

and the unit will continue the search at the lower limit.

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You also have the option of entering frequencies found while searching directly into one of the 20 scan channels. For example: entering a frequency found in search into channel 5.

When the unit stops on an active frequency,

PRESS: [ENTER] [0 SPEED] [5 12.5K]

NOTE: You must press "ENTER" while the Search is still stopped on the frequency.

Now the frequency found in search is entered into channel 5. Other frequencies found while searching can be entered into any of the other scan channels the same way. Press

[SEARCH]   to resume the search.

NOTE: In the Search mode it is recommended that you limit the search range to 1 MHz or less. Your chances of catching an unknown active frequency will be considerably greater since transmissions are usually short.

PRIORITY

This is a special feature that lets you program your favorite frequency to be sampled approximately once every two seconds and also to have it override calls on other channels. Channel 1 has been set aside for this function. Enter your favorite frequency into channel 1 then press the PRIORITY key.

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NOTE: PRIORITY is active only in the MANUAL or SCAN modes. The display will indicate priority with ''PRIORITY''.
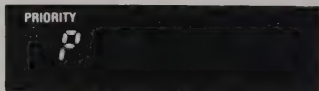
While the unit is in MANUAL or scanning, the display will blink each time channel 1 is sampled. Any audio will also be briefly interrupted. Should a transmission begin on channel 1, the unit will go immediately to it and receive the message. After the message, the unit will resume scanning or return to the other channel. To de-activate priority, press the PRIORITY key again.

NATIONAL WEATHER SERVICE

The National Weather Service provides a continuous (24-hour) broadcast of local and area weather conditions. These weather messages are repeated until the next or updated report is issued. The Weather Service has broadcast facilities in many metropolitan areas of the country.

If you are located within 25 or 30 miles of one of these cities, reception can usually be obtained with the telescopic antenna supplied with the unit. Your local Regency dealer can advise you about your specific antenna requirement.

NOTE: When set to automatic scan, the MX7000 will stop and remain on the Weather Channel (because it broadcasts con-

tinuously). Thus, this channel should only be activated when you desire to hear the current weather report.

120 VAC INSTALLATION

Plug one end of the AC cord into the AC receptacle on the rear of the radio. Plug the wall-mounted power supply into a 120 volt wall outlet. The MX7000 requires very little ventilation, however very warm locations such as near radiators or heating vents should be avoided.

MOBILE (12 VDC) INSTALLATION

NOTE: Mobile reception of a POLICE frequency by UN-AUTHORIZED personnel is ILLEGAL in some areas. It is the responsibility of the person making the installation to be sure that the user of this receiver is authorized or cleared through the local police department. Under no conditions can Regency Electronics, Inc., the manufacturer of this set, be held responsible for its unauthorized installation or use.

The MX7000 receiver may be used in any car, truck, etc., that has a 12 VDC negative ground system. For permanent DC operation in a vehicle, it will be necessary to use the DC cord. The red lead must be connected to the positive terminal side of the battery. The female quick-connect terminal is then pushed on to the male terminal in the power connector.

MEMORY

Your Regency MX7000 is equiped with a permanent backup system. No batteries are required. A special capacitor retains stored frequencies for approximately 1 week during power outage or storage.

ATTENUATOR SWITCH

The attenuator switch is located on the rear panel next to the antenna jack. (See page 3.) Push the switch down " − 10 db position" to pick up local frequencies in highly congested areas. Most frequencies can be picked up in the normal "0" position.

EXTERNAL ANTENNA

In areas of very low signal strength, it may be necessary to use an antenna system better than the telescopic one for proper reception. An external antenna mounted as high above the ground as practical will greatly increase the signal strength. If it is determined that proper reception will require an external or outside antenna, then it is suggested that a tri-band antenna (it covers both VHF bands, 30-50 MHz and 144-174 MHz, and UHF) be used. There are several manufacturers of tri-band, monitor type antennas. They are usually available at the source from which the receiver was purchased.

For proper input matching, 50 ohm coaxial cable such as RG 58/U should be used. A UG88/U BNC type plug installed on the receiver end of the cable in order to utilize the BNC antenna socket located on the rear panel of the unit. (See rear panel diagram on page 3).

EXTERNAL SPEAKER

An external (or remotely mounted) 8 ohm speaker, such as Regency's MA-108, can be used by merely inserting the mating phone plug into the 3.5 mm jack on the unit's rear panel. (See rear panel diagram on page 3). An 8 ohm speaker is recommended for optimum performance; do NOT use a 3-4 ohm speaker. The internal speaker is automatically disconnected when an external speaker is used.

SPECIFICATIONS:

(Subject To Change Without Notice)

Receiving frequency	25-550 MHz
CB (AM)	26-28
VHF Low (NFM)	27-50
VHF Amateur (NFM/WFM)	50-54
TV Audio (WFM)	54-88
FM Broadcast (WFM)	88-108
VHF Aircraft (AM)	108-136
Space Research (Various)	136-144
VHF Amateur (NFM)	144-148
VHF High Band (NFM)	148-174
TV Audio (WFM)	174-216
Government (Various)	216-220
VHF Amateur (NFM)	220-225
VHF/UHF Aircraft (NFM)	225-336
Government (Various)	336-406
UHF Government (NFM)	406-420
UHF Amateur (NFM)	420-450

Specifications Con't.

UHF Standard (NFM)........................... 450-470
UHF Extended (NFM) 470-512
Receiving Frequency .... 800 MHz to 1.2 GHz
  Includes:
    800 MHz and Cellular.............. 806-881 MHz
    Amateur Communications .... 1 GHz
    Weather .... 1.1 GHz
Receiving sensitivity
  Narrow FM .... 1.0 μV (12 db SINAD)
  Wide FM .... 1.5 μV (12 db SINAD)
  AM .... 1.5 μV (10 db S/N)

Receiving selectivity
  NFM............................ $\pm$7.5 KHz @ 6 db
  WFM........................... $\pm$50 KHz @ 6 db
  AM............................. $\pm$5 KHz @ 6 db
Image and spurious rejection .... $-$50 db
Number of memory channels .... 20 channels
Intermodulation............................ $-$50 db
Receiver circuitry .... PLL Synthesizer
Scanning rate......................... 5 channels/sec.
Searching rate .... 1 MHz/6 sec.
Audio output .... 1 W at 10% distortion
Power requirements...................... 12-14 VDC
Method of display .... LCD
Dimensions (W $\times$ H $\times$ D) .... 5.4" $\times$ 3.1" $\times$ 7.9"
  mm .... 138 $\times$ 80 $\times$ 200
Weight .... 2.4 lbs.
  Kg .... 1.1 Kg

TROUBLESHOOTING GUIDE

NOTE: Please perform the simple checks indicated for improper operation before returning the unit for service.

TROUBLE	CHECK
No display, no sound	Volume knob should be turned clockwise.
	Power Cord (AC or DC Connection). See also specification for power requirements.
	DC cord.
Display, no sound	Volume Control setting — check by turning clockwise.
No reception (no station heard)	Squelch Control setting — see page 4.
	Antenna not installed.
	Incorrect frequencies entered.
Weak or poor reception	Antenna should be fully extended.
	Stations too far away; external antenna may be needed. See page 20.
	Incorrect frequencies entered.
Does not scan	If in Manual mode, press SCAN.
	Channels locked out—see page 14. Squelch control setting—see page 4.

Trouble Guide Con't.

Search Scan stops on channels without stations	Birdies—see page 24.
"Error" appears in readout	Invalid frequency entered — see page 10.

BIRDIE LIST

Every complex receiver has frequencies that are difficult or impossible to receive because of internally generated signals. These frequencies are called "birdies". The following is a partial list of such frequencies that may occur in the MX7000.

Low VHF (30-50 MHz)	High VHF (144-174 MHz)	UHF (440-512 MHz)
33.600	145.600	502.200
39.200	154.800	
44.800	173.600	
46.360		
46.385		

In addition, there are other frequencies that are difficult to receive because of interference from externally generated signals, such as T.V. stations, other receivers nearby and various other sources of man-made noise. These frequencies vary from location to location and are therefore impossible to list. When this type of interference is encountered, it can sometimes be eliminated by moving the Squelch Control knob counterclockwise (increase squelch action).

REGENCY SCANNERS
LIMITED WARRANTY

1. The warranty applies to the original or subsequent owners of the product for a period of 1 year from the original purchase date.

2. We agree to repair or replace all parts showing defects in material or workmanship.

3. Warranty service will be provided free of charge if unit is delivered to us intact, transportation charges prepaid, accompanied by dated proof of purchase within one year of the date of sale to the original purchaser.

4. The warranty does not apply to units subject to misuse, neglect, accidents, incorrect wiring not our own, improper installation, or units used in violation of the instructions furnished by us. Nor does the warranty apply to units: damaged by lightning, excess current, repaired or altered outside the factory, or units with altered or removed serial numbers.

5. To have your unit serviced under the warranty return it, freight prepaid, with proof of purchase receipt, to:

   Customer Service Department
   Regency Electronics, Inc.
   7707 Records St.
   Indianapolis, IN 46226

   Only factory personnel are authorized to perform warranty service.

   NOTE: When returning unit for warranty service, do NOT include any accessories (antenna, power cord, memory battery, etc.).

6. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.